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THESIS

**SHIELDING ACHILLES' HEEL: CHALLENGES FACING
NORTHERN COMMAND IN THE MARITIME DOMAIN**

by

Carlos Urbizu

March 2004

Thesis Advisor:
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**SHIELDING ACHILLES' HEEL: CHALLENGES FOR
NORTHERN COMMAND IN THE MARITIME DOMAIN**

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

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ABSTRACT

This thesis examines the role U.S. Northern Command (NORTHCOM) is performing in the maritime domain as the new Unified Command responsible for homeland defense. NORTHCOM does not currently have a permanent maritime component assigned for missions. Instead, it relies on contingency planning for future events and theoretically acts as a coordinating bridge between the Navy and Coast Guard for Maritime Homeland Defense/ Security issues.

The primary objective of this research is to answer the question: Can NORTHCOM effectively execute maritime homeland defense and support homeland security without having permanently assigned maritime forces?"

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This thesis is dedicated to the memory of my grandparents, Alberto and Isabel Cruz, who abandoned the comforts of their home in Havana, Cuba for a better life for their family. Their lessons of liberty and political freedom are cast like iron in my psyche.

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I. INTRODUCTION

A. PURPOSE

This thesis will examine the role U.S. Northern Command (NORTHCOM) is performing in the maritime domain as the new Unified Command responsible for homeland defense. NORTHCOM does not currently have a permanent maritime component assigned for missions. Instead, it relies on contingency planning for future events and theoretically acts as a coordinating bridge between the Navy and Coast Guard for Maritime Homeland Defense/ Security issues. This thesis asks and seeks to answer the question, "Can NORTHCOM effectively execute maritime homeland defense missions and support homeland security without having permanently assigned maritime forces?"

B. BACKGROUND

When Achilles, the Greek hero of Troy, was born, his mother, aimed to immortalize him by dipping him in the river Styx. She immersed him, holding him by one heel but forgot to dip him a second time so the heel she held him by would get wet as well. Consequently, the place where she held him remained untouched by the magic water of the Styx and that part stayed mortal or vulnerable.

The United States has experienced an Achilles-like birth to the constellation of vulnerabilities within its homeland since September 11th, 2001. As of September 7, 2002, 3044 people are presumed dead resulting from the three successful attacks in New York and Washington D.C. and and fourth known failed attack over Pennsylvania.¹ The economic impact from these attacks on the homeland is still debated. Recently, a 29 May, 2003 Government Accounting Office report on the impact of the 2001 World Trade Center attack

¹ "September 11, 2001 Terrorist Attack/Casualties," in Wikipedia [on-line encyclopedia] (2003 [cited 11 August 2003]); available from World Wide Web @ <http://www.wikipedia.org>

estimated the direct and indirect costs between \$54 and \$84 billion.² There is no known reliable estimate of the psychological costs.

Among the vulnerabilities found and predicted as potential terrorist targets are approximately 350 seaports along 12,380 miles of U.S. coastline. These ports of entry include over 100 major ports, points of embarkation and debarkation for military sealift, and many smaller unprotected harbors and piers. These seaports import and export approximately 96% of our trade. An unchecked coordinated seaborne attack could exploit the Achilles Heel of the U.S. if ports are shutdown to traffic in the same approach that U.S. airspace was shut down in the days that immediately followed the 9/11 attacks.

Like Achilles' mother, the Bush Administration and Congress have been harried in covering all conceivable vulnerabilities to the Nation's security. Militarily, the Department Defense answer to the Homeland Security/ Defense quandary was the establishment of Northern Command on 1 October 2002, the first Unified Command assigned to consolidate existing missions of Homeland Security and Defense previously dispersed among the branches of the military.

While there is a growing body of literature and debate reflecting on NORTHCOM's presumed ground and air defense missions, there is little found regarding the maritime dimension. The conventional wisdom in the existing body of literature is two-fold: (1) The Coast Guard is responsible for and becoming increasingly capable of maritime homeland security. (2) The Navy is already acting in the interest of homeland defense through forward presence operations and the Navy also has the capability to surge or sortie should the Secretary of Defense order them to do so for a homeland defense mission.

Between maritime homeland security and homeland defense, however, there is a transition seam that has been relatively unexplored except through wargaming. This transitive seam is where NORTHCOM will need to harmonize

² Government Accounting Office, *Impact of Terrorist Attacks on the World Trade Center*, GAO-02-700R, Washington D.C.: 29 May 2002.

the Navy and Coast Guard missions if there were a coordinated maritime attack on the homeland at or near the magnitude of the 9/11 attacks.

C. OBJECTIVES

The primary objective of this research is to answer the question: Can NORTHCOM effectively execute maritime homeland defense and support homeland security without having permanently assigned maritime forces?"

Secondly, this thesis seeks to study the potential threats that could challenge NORTHCOM in the maritime domain. This thesis also aims to scrutinize the seam in transition from Maritime Homeland Security to Maritime Homeland Defense and explicate potential mission priority, service capability, and cultural mismatches that could potentially stymie command and control in the transition from a HLS to HLD posture in the event of a seaborne terrorist attack.

This thesis will attempt to help inform and assist maritime homeland security and defense policy makers in determining whether or not the current maritime defense support apparatus in place is sufficient to achieve a timely transition from homeland security to homeland defense.

D. METHODOLOGY

Major sources for this thesis will include domestic journal analyses, and published assessments by government and non-government "think tanks," and reports from ongoing operations in support of maritime homeland security/defense.

Published results and policy recommendations from the Naval Postgraduate School 2001 and 2003 Maritime Security/ Defense Wargames³ will be used to mirror this study and serve as validation points for operational concepts or uncover potential flaws in the current system. Telephone and if travel is authorized, personal interviews will be conducted with officers from NORTHCOM, the Navy, and the Coast Guard.

³The Naval Postgraduate School hosted a Maritime Homeland Security Wargame in 2001 and a 2003 Maritime Homeland Security/ Defense wargame sponsored jointly by the U.S. Navy and U.S. Coast Guard. Both games tested interoperability between various federal, state, and civilian stakeholders under various intense scenarios where Pacific U.S. ports were under terrorist attack.

E. OVERVIEW

NORTHCOM is assigned a 500nm boundary along the U.S. coasts as the maritime boundary zone of its area of responsibility. Chapter II serves to delineate the scope of the maritime threat to the U.S. within this 500nm boundary. The threat ranges in scope from a low impact attack by way of small boat attacks or harbor mining; medium impact attacks from hijacked vessels converted into weapons employed against vulnerable targets within ports; and high impact attacks from weapons of mass destruction (WMD) transported via container and detonated in or beyond a U.S. port. Several successful and foiled terrorist maritime attacks have occurred both before and after September 11, 2001. These attempts are presented to reinforce the capability and intent for potential future terrorist maritime operations.

Chapter III will define the Maritime Homeland Security (MHLS) and Maritime Home Land Defense (MHL D) missions. NORTHCOM's mission and dual roles also will be outlined here. Its first role is to provide support for Homeland Security by acting as a coordination center and force provider for Civil Support. Its second and primary role is to serve as the theater commander for Homeland Defense in the event there is another attack on the Continental U.S. While this is a solid mission for commanding various National Guard and other land defense elements among the continental states, is this construct effective for maritime defense? Additionally, there is an apparent seam between NORTHCOMS's MHLS and MHL D missions that requires scrutiny. This seam will be studied and defined here. This chapter will also outline the maritime defense chain of command to the component level of the Navy and Coast Guard and explain how the Navy and Coast Guard comprise a "notional"⁴ National Fleet. They are two clearly separate organizations with dissimilar missions and cultures. The Maritime Defense Zone (MARDEZ) concept, established during

⁴ The term notional is added here because there has not been a true national fleet for coastal defense since World War II. The national fleet concept was developed during the Cold War via the Maritime Defense Zone (MARDEZ) which was intended to activate Coast Guard and Navy elements under Coast Guard command in the event of a maritime attack on the U.S. Note that on September 11, 2001, the MARDEZ command structure was never formally activated.

the Cold War, married these two maritime forces under one command in the event of an attack on the homeland. Now, under NORTHCOM both forces are required to respond to a homeland attack in similar fashion. Specifically, U.S. Navy and U.S. Coast Guard mission priorities before and after 9/11 will be examined.

Chapter IV examines the competing mission priorities the cultural challenges for NORTHCOM in the maritime domain. This chapter compares and contrasts the differences in mission priorities between the Navy and Coast Guard in the MHLS/ MHL D mission before and after 9/11. Specifically, this chapter seeks to highlight the tension between focusing on a home vs. away game strategy. This chapter also queries whether or not competing capability and cultural mismatches exist between the Navy and the Coast Guard maritime forces.

In Chapter V, two case studies providing insights into the challenges facing NORTHCOM are reviewed. Operation Noble Eagle is the first and continuing homeland defense operation that has a maritime dimension. The November 2001 Maritime Homeland Security Wargame, held at NPS in Monterey, was the first maritime wargame since 9/11 engaging Navy and Coast Guard staffs as well as federal and other stakeholders. The April, 2003 Maritime Homeland Security/ Defense Wargame, also held at NPS, was the first such wargame since the establishment of NORTHCOM. Between these two wargames, valuable lessons have been learned to help deal with future attacks including worst-case scenarios. This chapter will examine these cases and present them within the context of the current maritime chain of command/ authority under NORTHCOM as a test against the original thesis question.

The concluding chapter summarizes some of the challenges for NORTHCOM in the maritime dimension of Homeland Defense and Security. This chapter also reviews the research questions, suggests some recommendations for closing the seams in the MHLS/ MHL D missions, and suggests areas for further research.

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II. THREATS TO THE MARITIME DOMAIN

A. SCOPE OF MARITIME THREAT TO HOMELAND SECURITY

NORTHCOM is assigned a 500nm off-shore boundary along the U.S. coasts as the maritime boundary zone of its area of responsibility. In this chapter, the thesis will review the scope of the maritime threat to the U.S. within this 500nm boundary in context to recent international maritime terrorist activities.

The threat ranges in scope from a low impact attack by way of small boat attacks; medium impact attacks from smuggling weapons by sea or hijacked vessels converted into weapons against vulnerable targets within ports; and high impact attacks from weapons of mass destruction transported via container and detonated in or beyond a U.S. port.

Several successful and foiled terrorist maritime attacks have occurred both before and after September 11, 2001. These attempts are presented to reinforce the capability and intent for future potential terrorist maritime operations.

The Maritime threat to Homeland Security is a clear and present danger. While no recorded terrorist attacks have occurred in the maritime domain of the United States, several milestone events point to a trend in potential synergy by terrorists against U.S. maritime target sets.

B. LOW IMPACT THREAT

For this thesis, a low impact threat is defined as any single attack conducted against a maritime target which inflicts less than 100 casualties, will not disrupt the economy, and creates little psychological impact on the homeland. While there have not yet been any known low impact maritime attacks within NORTHCOM's Area of Responsibility (AOR), low impact attacks have been attempted internationally. The attempted plot against the USS The Sullivans, the successful attack against the USS Cole, and the successful attack on the French MV Limburg, are all pointers to the potential of future maritime terrorist operations against U.S. targets.

1. The Sullivans

On 3 January 2000, the USS The Sullivans berthed in Aden Harbor, Yemen for refueling and provisions while enroute to the Arabian Gulf. The ship topped off and proceeded to the Arabian Gulf, rendezvousing with the John F. Kennedy Battle Group, where she conducted Maritime Intercept Operations. The Sullivans successfully completed her deployment and returned to Mayport, Florida in March of 2000 without incident.

That morning in Aden, while The Sullivans was being serviced, conspirators loaded a boat with explosives and launched the boat from the beach. The conspirators aborted the attack because of a miscalculation. The loaded explosives displaced too much weight and the boat sank in the harbor under the weight of the explosives.

The crew was unaware, until an FBI investigation into the USS Cole incident, that they narrowly escaped an attack that would have likely sunk the ship. The Sullivans was the target of an Al Qaeda assault by Jamal Ahmed Mohammed Ali Al-Badawi and Fahd al-Quso. Both have been charged by the U.S. Department of Justice "with 50 counts of various terrorism offenses, including murder of U.S. nationals and murder of U.S. military personnel."⁵

The terrorists eventually regrouped and returned to Aden after the aborted mission. They salvaged the explosives, re-enforced the hull of their attack boat, and installed additional fuel tanks.⁶ They then waited patiently ten months for their next window of opportunity for an assault.

2. USS Cole

On 12 October 2000, nearly ten months after the failed attack on the Sullivans, the Yemen cell of Al Qaeda successfully attacked the USS Cole. Like The Sullivans, Cole was berthed in Aden Harbor for a brief stop for fuel (BSF).

⁵United States Department of Justice Official Press Release, "Al Qaeda Associates Charged In Attack On USS Cole, Attempted Attack On Another U.S. Naval Vessel," [on-line report] (15 August 2003 [cited 20 August 2003]); available from World Wide Web @ <http://www.usdoj.gov>

⁶Curt Anderson, "Terrorism Charges Brought in USS Cole Bombing," [on-line magazine] (15 May 2003 [cited 25 August 2003]); available from World Wide Web @ <http://cnews.canoe.ca>

At 0515 (EST), two men approached the port side amidships of the Cole in a small boat, stood up at attention, and detonated the explosives aboard the craft penetrating the hull of the Cole. The attack claimed 17 dead and 39 injured service members.⁷ Like The Sullivans, the Cole was two months into her deployment and bound for the Arabian Gulf in support of ongoing forward presence operations in that theater.

3. MV Limburgh

At 0915 on 06 October, 2002 a second successful small boat attack was executed in Yemen. This time the target was the MV Limburg, a French oil tanker, anchored at the port of Ash Shihr, at Mukallah, 353 miles east of Aden. MV Limburg had just loaded heavy crude in Iran and was at anchor, awaiting a harbor pilot, to enter the deep draft port of Ash Shihr to complete her load.

In an account of the incident by the Captain, "A junior officer saw a craft approaching the Limburg. He was of the opinion that we touched that craft and then there was an explosion."⁸ The tanker was reported by witnesses as having been struck along the starboard quarter by the small craft, followed by an explosion. The impact of the explosion "pierced both hulls and penetrated 7-8 metres into the cargo hold, which was loaded with crude oil."⁹

All but one of the 25 crew members were accounted for with only minor injuries when they abandoned ship after the fire spread out of control. 90,000 barrels of the 397,00 barrels of crude oil already aboard were lost. In a follow-on report "The militant Yemeni Islamic group Aden-Abyan Islamic Army has claimed responsibility. . .The group sent a statement to the daily Asharq al-Awsat newspaper, saying a US frigate had been the original target."¹⁰ However, the

⁷United States Department of State, *Patterns of Global Terrorism, 2000*, [on-line document] (30 April 2001 [cited 28 August 2003]); available from World Wide Web @ <http://www.state.gov/>

⁸British Broadcast Company, "Craft 'Rammed' Yemen Oil Tanker," [on-line magazine] (06 October 2002 [cited 02 September 2003]); available from World Wide Web @ <http://news.bbc.co.uk/>

⁹Ibid.

¹⁰British Broadcast Company, "TNT Found in Stricken Yemen Tanker," [on-line magazine] (11 October 2002 [cited 02 September 2003]); available from World Wide Web @ http://news.bbc.co.uk/1/hi/world/middle_east/2320893.stm

similarities between the Limburg and Cole attacks suggest that Al Qaeda is the more likely group responsible.

4. Analysis of Low Impact Threat

Further attacks on this scale seem highly probable. These attacks are more feasible and well within Al Qaeda's capability. Yemen, because it was not a hostile operating area for Al Qaeda, could be either viewed as an anomaly by optimists, or a testing ground for future operations of this nature against targets on the U.S. Homeland.

The attacks took careful planning. U.S. warships had already visited Aden as stated by General Tommy Franks, then Commanding General of Central Command, in his testimony before Congress on the USS Cole attack "Since the U.S. Navy began refueling operations in Aden in January '99, Navy ships have conducted 27 brief stops for fuel (BSF), two port visits, and one logistics replenishment visit."¹¹

With the follow-on attack on the MV Limburg, is perhaps a successful and escalating pattern is emerging? This time, the attackers have proven that they can operate high-speed craft and may operate larger craft in order to carry more explosives. While this is not a study on marine engineering, it makes sense that more explosives are required to penetrate a double-hulled ship than the 5" single hull of an Arleigh Burke Destroyer.

Al Qaeda's second successful maritime attack shifted from a hard target such as a warship to a soft target such as an oil-tanker which does not necessarily have very robust security measures as military targets. Could this suggest that with the increase in force protection measures for Navy units overseas, Al Qaeda will pursue the path of least resistance and continue to attack soft targets? If so, lessons from successful military force protection should be drawn and applied to the civilian sector.

¹¹ United States Department of State, "General Tommy Franks Testimony on USS Cole Attack," [on-line] (25 October 2003 [cited 30 October 2003]); available from the World Wide Web @ <http://usinfo.state.gov>

C. MEDIUM IMPACT THREAT

A Medium Impact Threat is defined by this thesis as any single or multiple attacks conducted against a maritime target which has the potential to inflict more than 100 but less than 1,000 casualties; will have some impact on the economy or intermodal system; and creates a significant psychological impact on the homeland. While no known medium impact maritime attacks have yet occurred within NORTHCOM's AOR, some medium impact attacks have been attempted internationally. Weapons and explosives smuggling for terrorist operations is the most common operational link observed.

1. Santorini Incident

On 6 May 2001 an Israeli Air Force maritime patrol aircraft on routine patrol over the Mediterranean Sea, identified and reported a suspicious vessel, 'Santorini', approaching Israeli waters. Four Israeli patrol craft and missile boats were dispatched to intercept this small, 40-ton ship. The Santorini was soon intercepted in international waters just outside the 12 nm territorial limit of Israel. The Israeli crews noticed on the Santorini's deck a large number of plastic barrels of different sizes common to smuggling operations.

A preliminary search of the cargo revealed an extensive shipment of sophisticated weapons packed into watertight containers. The containers, resembling barrels, were to be dropped off the Gaza coast and floated by incoming tidal currents to the shore. A crew of four Lebanese men said that similar shipments had been delivered 'safely' and revealed that the unsuccessful drop was their third voyage to Gaza.¹²

A marine commando contingent of the IDF Navy's Special Forces unit was ordered to board and the ship was seized without incident. The four crewmen aboard the 'Santorini' did not attempt to resist the takeover. The vessel was escorted to Haifa, Israel. Among the seized weapons were fifty 107mm Katyusha rockets, two 60mm light mortars with 98 rounds, 70 fragmentation mines, 20 RPG-7s, 120 anti-tank grenades, and 30 AK-47s with 13,000 rounds of standard 7.62mm ammunition.¹³

¹² David Eshel, "Israel intercepts Strela-2 shipment," Jane's Intelligence Review, 01 June 2001

¹³ Ibid.

Also found aboard were four Strella-2 surface-to-air missile launchers which, according to Jane's is obsolete against military aircraft but still lethal against commercial aircraft not equipped with countermeasures.

2. Karine "A" Affair

On 3 January 2002 Israeli Defense Force (IDF) commandos raided and seized the Karine "A," a 4,000-ton cargo freighter, 400 miles from the Israeli coast in the Red Sea. In an operation ironically named "Noah's Ark," the IDF seized over 50 tons of conventional weapons. The arsenal reportedly included: dozens of 122mm and 107mm long range Katyusha rockets, hundreds of shorter-range 81 mm rockets, Mortars, SAGGER and RPG 18 anti-tank missiles, sniper rifles, AK-47 assault rifles, assorted anti-tank and anti-personnel mines, two Zodiac inflatable boats, and 3,000 pounds of C4 explosive.¹⁴

The Karine "A" seizure revealed a sophisticated concealment and retrieval system used by the smugglers where the weapons are placed in airtight containers that have the capability of buoyancy and ballast. The containers are dumped overboard and sunk, then later retrieved by divers on smaller boats.

3. Analysis of Medium Impact Threat

A medium impact attack seems unlikely against the U.S. at present but remains a concern for future operations. For every successful intercept of these smuggling operations, one has to wonder how many already got through.

Could Al Qaeda exploit our already vulnerable intermodal system of transportation? Drug and migrant smugglers continue to succeed at breaching the U.S. borders. Could Al Qaeda or others smuggle weapons into the U.S. following similar methods to the smuggling operations in Israel? Consider this scenario where a vessel from a trusted port with cargo flagged for customs dumps his undeclared cargo (the weapons) but just before entering port. Al Qaeda has already demonstrated the intent to train divers for maritime operations. If two men with one sniper rifle could cause chaos in the greater

¹⁴Israeli Defense Force, "Inventory of the Weapons Seized on the Karine-A," [on-line] (2002 [cited on 10 October 2003]); available from the World Wide Web @ <http://www.idf.il/english>

Washington D.C. area, imagine the impact of a *Santorini* or *Karine* "A" type delivery of a 50-ton cache of weapons to a drop point near a U.S. port.

D. HIGH IMPACT THREAT

A High Impact Threat is defined as any single or multiple attacks conducted against a maritime target, which has the potential to inflict more than 1,000 casualties; severely impact the economy and intermodal transportation system; and create a major psychological impact on the homeland. There have not been any high impact maritime attacks within NORTHCOM's AOR, nor internationally. The main danger of a high impact attack is the use of a weapon of mass destruction or weapon of mass disruption emanating from a ship.

1. *Baltic Sky* Incident

While no high impact maritime attacks have occurred in history, an incident encountered by Greece on 22 June, 2003, demonstrates the alarming potential for future attacks --- rogue ship. The *Baltic Sky*, a relatively small (1,170 tons) oil tanker was boarded and seized by Monada Ypovrixion Kastrofion, the Greek Special Forces, in the Ionian Sea after receiving reports from Turkish authorities that it was acting suspiciously. The ship departed Istanbul, Turkey on 02 June with its new captain and loitered off the Greek Isles for three weeks instead of proceeding to its next port of call in Sudan.¹⁵

Greek authorities reported that the ship was transporting "a commercially manufactured ammonium nitrate-based explosive known as ANFO, which is often used in mining and construction."¹⁶ 750 tons of the ANFO explosive and 8,000 detonators were seized. A police source, in a *Guardian* report of the incident stated "the sheer volume of the explosives involved is mind-boggling. One metric tonne is enough to blow apart an entire apartment block; here we're talking about 680 tonnes [750 U.S. tons] floating around the Mediterranean."¹⁷

¹⁵Theodora Tongas, "Greece Probes Errant Explosives Ship," [on-line] (24 June 2003 [cited on 15 October 2003]); available from the World Wide Web @ <http://www.cleveland.com>

¹⁶CNN, "Greece Traces Route of Seized Ship," [on-line] (24 June 2003 [cited on 20 October 2003]); available from the World Wide Web @ <http://www.cnn.com>

¹⁷Helena Smith, "NATO 'Terror' Tipoff on Explosives Ship Sailing to Sudan," [on-line] (24 June 2003 [cited on 20 October 2003]); available from the World Wide Web @ <http://www.guardian.co.uk/>

This is the first reported incident in the war on terror where a vessel has been seized with enough explosives aboard to yield the same destructive power as a low grade nuclear weapon. The incident is still under investigation with only speculation on the actual intent of the *Baltic Sky*. Nevertheless, a vessel with 750 tons of explosive succeeded in entering a nation's territorial waters without declaring the hazardous cargo. This incident suggests that loading a vessel with explosives and entering territorial waters is possible and seemingly more feasible than transporting nuclear weapons which are much more closely scrutinized under international non-proliferation treaties and agreements.

2. Analysis of High Impact Threat

Al Qaeda reportedly has made the acquisition of WMD capability a priority. The most compelling evidence that this is a priority can be found in the February 7, 2001 testimony of prosecution witness Jamal Ahmad Al-Fadl in *United States v. Usama Bin Laden et al.*, defendants. Al-Fadl testified to his attempted late 1993 and early 1994 role in helping Bin Laden acquire uranium, most probably for the development of nuclear weapons, from a resource in Sudan.¹⁸ Al-Fadl's testimony coupled with the trend that attacks against U.S. target sets are increasingly more dramatic, suggests that the acquisition of a WMD is a long range and possibly attainable goal of Al Qaeda, given sufficient time.

The case of the *Baltic Sky*, however demonstrates that terrorists do not need nuclear or biological weapons to pose a high-risk threat. The *Baltic Sky* had enough explosives aboard to yield similar destruction in a port as a low grade WMD. By comparison, the Mother of all Bombs (MOAB) tested just prior to Operation Iraqi Freedom in March 2003, was reported to have the following bomb damage radius:¹⁹

- Up to 1,000 yards: Obliterates everything.

¹⁸ United States District Court, "Testimony of Prosecution Witness Jamal Ahmad Al-Fadl," *United States v. Usama Bin Laden et al.*, Defendants, 7 February 2001

¹⁹Niles Lathem, "The Mother of all Bombs: 21,500-lb Monster Meant to Shock Iraq Into Surrender," *The New York Post*, 12 March 2003

- Up to 1 mile: Knocks people, tents, light buildings, cars and jeeps over within 1-mile radius.
- Up to 1.7 miles: shock wave kills people, causes severe damage to buildings, equipment, blows trucks, tanks off road.
- Up to 2 miles: causes deafness.
- Up to 5 miles: shakes ground, breaks windows.
- Up to 30 miles: 10,000 foot high mushroom cloud visible.

The MOAB carries 18,700 lbs of high explosive. This equates to roughly about 9 tons. It would take 83 MOABs to equal the explosive potential of the cargo aboard the *Baltic Sky*.

While efforts toward stemming proliferation of weapons overseas are prudent, an eye toward vulnerabilities of vessels that could be converted into weapons of mass destruction is equally important. One potential target, if thinking asymmetrically, is an attack on a Liquid Natural Gas (LNG) tanker while entering port.

There are four existing LNG terminals in Georgia, Louisiana, Massachusetts, and Maryland. There are no LNG terminals on the west coast; however, recent reports suggest future plans to build up to 9 additional LNG terminals along the east, west, and gulf coasts with LNG imports accounting for 15% of the U.S. energy market by 2025.²⁰

The volatility and destructive potential of LNG makes it a perfect fit for terrorists who want to both disrupt the economy and orchestrate a dramatic attack that will draw in the media. Demonstrating the volatility of this concern, the potential to either capture or in some way exploit the destructive potential of

²⁰Spencer Swartz, "US Market Seen Needing 13 LNG Import Terminals," (18 December 2003 [cited on 04 January 2004]); available from the World Wide Web @ <http://biz.yahoo.com/>

an LNG tanker has been studied and also wargammed in the U.S. subsequent to the 9/11 attacks.²¹

E. HALIFAX: THE TOWN THAT DIED

History has recorded how the accidental collision of two ships and the subsequent detonation of an explosives ship, the SS Mont Blanc, virtually destroyed the town of Halifax, Nova Scotia. On 06 December 1917, the SS Imo and The SS Mont Blanc collided in Halifax Harbor setting off a volatile chain of events.

The SS Mont Blanc, a small French freighter was converted that year into an explosives transport for a one-time shipment of explosives with the intended destination of Bordeaux during World War I. The vessel's manifest indicated that she was carrying "2,300 tons of picric acid, 200 tons of TN,T, 35 tons of benzole, and ten tons of gun cotton. "²²

Mont Blanc's slow speed landed made her vulnerable to a U-Boat attack so she was ordered to Halifax where she would join a larger and slower convoy that could afford her some protection. While entering port, an ill-fated string of events transpired resulting in the Mont Blanc and the Imo Colliding in a bottleneck passage in the harbor known as the "narrows."

The collision set off a fire, the only missing ingredient for this floating bomb, and ignited the largest man-made explosion long before the U.S. strikes against Hiroshima and Nagasaki. The estimates of the aftermath were that the explosion killed 1,963, injured 9,000, and blinded 199 people. Nearly 320 acres of the town were leveled and the property loss and cost of repairs were estimated at \$35 Million.²³

The thesis has classed the threat matrix for the purpose of this study based on the potential physical, economic, and psychological impact --- typical

²¹ A study of U.S. LNG terminals as part of a terrorist target set was included in the 2001 MHLS Wargame at NPS.

²² Michael J. Bird, *The Town That Died*, London:1962.

²³ Ibid.

terrorist goals when planning an operation. Based on the patterns of attacks by al Qaeda, some precepts can be made: (1) Al Qaeda aims at dramatic attacks that will grab media attention, (2) Al Qaeda has an intrinsic ability to think and operate outside the box, (3) Al Qaeda learns from its successes and failures and tries to apply those lessons to future operations.

There is a predicament for planners when considering the impact of an attack, which must be acknowledged here. Policy makers, scholars, and defense planners argue that the clearest and most present danger against the homeland is the detonation of a WMD at or beyond a U.S. port, and therefore consider that the most likely high impact threat. This is not necessarily true.

A WMD attack in a single port, while devastating and horrific, will not shut down the economy, nor have a long-term effect on other ports. Conversely, a threat normally considered low impact such as a small boat attack or mining operation could rise to the level of high impact if the attacks were coordinated at multiple ports.

If Al Qaeda is able to think outside the box and think strategically, as this thesis and other sources contend, it would make sense that with the mounting pressures against proliferation of WMD, attempting a coordinated conventional attack against U.S. ports might draw less suspicion in the planning phase. NORTHCOM planners could draw some valuable lessons from these incidents in trying to determine how best to defend the maritime domain.

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III. STRUCTURAL CHALLENGES CONFRONTING NORTHCOM IN THE MARITIME DOMAIN

A. SECURITY VS DEFENSE IN NORTHCOM'S MARITIME MISSION

Maritime Homeland Security and Defense are both missions that require a team effort. The stakeholder wheel on both the 2001 and 2003 NPS Maritime Homeland Security/ Defense Wargames is testament to the complexities of who is or may be involved in securing and defending the homeland.²⁴ While this thesis acknowledges that NORTHCOM must coordinate with a slew of federal, state, and local agencies, a full analysis of these relationships is beyond the scope of this study. Instead this thesis will focus solely on NORTHCOM's challenges in coordinating with the Coast Guard and the Navy on security/ defense missions.

The conventional wisdom suggests that security of U.S. ports, maritime approaches, and critical maritime infrastructure is a Coast Guard lead effort. The Navy is believed to be solely responsible for "blue water" operations and defense in the event of an attack on the U.S. and U.S. interests. However, the research in this thesis has found that the structural requirements in the spectrum of security and defense are both blurred and mismatched. The greatest structural challenge for NORTHCOM will be in planning which assets are required for its potential missions and contingencies and coordinating between the two services.

Prior to 9/11 the North American Air Defense Command (NORAD) coordinated air defense of the U.S. while the Joint Forces Command was designated to execute land and sea defense. Peter Verga, the Special Assistant [to the Secretary of Defense] for Homeland Security made an excellent parallel between what is needed for homeland defense and what is expected from first responders.

when we dial 9-1-1, we do not expect to have to deal with nine
different law enforcement agencies – we expect to deal with one

²⁴ Dr. Kathleen Roberts, *Maritime Homeland Security/ Defense Wargame: Game Book*, Naval Postgraduate School, Monterey, Ca.: April 2003

person who will energize the necessary agencies response. The same should be true for dealing with the defense of our nation and military support to civilian authorities.²⁵

The establishment of NORTHCOM is intended to create a unified command providing a single command and control authority over sea, air and land defense of the United States. This chapter will define the Maritime Homeland Security (MHLS) and Maritime Home Land Defense (MHL D) Missions. NORTHCOM's mission and roles also will be outlined here.

While competing terms exist for NORTHCOM's core missions, they essentially merge on three core mission postures within the Maritime domain. This thesis identifies three core mission areas within the maritime domain where NORTHCOM would be called upon to plan for, coordinate, and respond. These missions are: (1) Maritime Homeland Defense, (2) Maritime Homeland Security, (3) Civil Support.

This thesis examines an apparent seam between NORTHCOM's MHLS and MHL D missions that requires further scrutiny. This seam will be posited and studied here. This chapter will also outline the maritime defense chain of command to the component level of the Navy and Coast Guard.

B. NORTHCOM AND THE MARITIME DOMAIN

The definitions and roles of Maritime Homeland Security and Maritime Homeland Defense are moving targets. As of February 2004, nearly three years after Homeland Security and Homeland Defense became catchwords for the DOD's new homeland mission; there is still no official DOD definition of these terms cited in the *Joint Publication 1-02 Department of Defense Dictionary of Terms*.²⁶ Nevertheless, various strategic policies published since 9/11 offer some distinction between these terms and are addressed here.

²⁵ Peter Verga, "NORTHCOM: Questions and Answers on the Eve of Implementation," Transcript of speech delivered at The Heritage Foundation (26 September 2002 [cited on 22 October 2003]); available from the World Wide Web @ <http://www.heritage.org>

²⁶ *Joint Publication 1-02 Department of Defense Dictionary of Terms*, (February 2004 [cited on 13 February 2004]); available from the World Wide Web @ <http://www.dtic.mil>

1. The U.S. Maritime Domain

Since there are no current agreed upon definitions of MHLS and MHL D, the terms must be tapered from the “big picture” terms of Homeland Security and Homeland Defense. Because these missions are expressly in the maritime domain, it is important to understand what encompasses the maritime domain. The best definition of Maritime Domain can be found from the U.S. Coast Guard which explains the depth of the maritime domain as encompassing all U.S. ports and port security, inland waterways, harbors, navigable waters, Great Lakes, territorial seas, contiguous waters, customs waters, coastal seas, littoral areas, the U.S. Exclusive Economic Zone, and oceanic regions of U.S. national interest, as well as the sea lanes to the United States, U.S. maritime approaches, and the high seas surrounding America.²⁷

Both Coast Guard and Naval forces routinely patrol the Maritime Domain. Therefore, it is important to identify the roles and associated missions within the Maritime Domain and understand which agency is the lead for executing MHL D and MHLS. The maritime threat, mission, and capabilities drive who is the Lead Federal Agency (LFA), as opposed to the maritime boundaries.

2. Maritime Homeland Security

Homeland Security, as defined in the *National Strategy for Homeland Security* is “a concerted national effort to prevent terrorist attacks within the United States, reduce America’s vulnerability to terrorism, and minimize the damage and recover from attacks that do occur.”²⁸ The key words in this definition are (1) prevent attacks, (2) reduce vulnerability, (3) minimize damage, and (4) recovery.

As we are a maritime nation, our economy remains dependent on reliable, safe maritime related commerce. This dependence is increasingly important in the globalizing world economy. Avoiding or minimizing disruptions remains key.

²⁷ U.S. Coast Guard, *Maritime Strategy for Homeland Security*, Washington, D.C., December 2002.

²⁸ George W. Bush, *National Strategy for Homeland Security*, Washington D.C., 2002

Maritime Homeland Security, therefore, is a concerted national effort to prevent terrorist attacks within the United States Maritime Domain, and minimize or reduce vulnerability to ports and critical maritime infrastructure, to avoid any damage or disruption and quickly recover from any attacks that do occur.

3. Maritime Homeland Defense

Absent “official” agreement on terms, the working definition of Homeland Defense as viewed by the Department of Defense is

the military protection of United States territory, domestic population, and critical defense infrastructure against external threats and aggression. It also includes routine, steady state activities designed to deter aggressors and to prepare U.S. military forces for action if deterrence fails.²⁹

Maritime Homeland Defense or National Maritime Defense, as phrased by NORTHCOM is “All measures of Homeland Defense taken to deter, defeat, or nullify hostile maritime threats against U.S. territory, domestic population and critical infrastructure.”³⁰ It is important to note that while the focus of this study thus far has been from the perspective of MHLA against a non-state threat (i.e. terrorist threat); MHLA also encompasses planning against a direct attack on the U.S. by a rogue or hostile sovereign nation.

4. The Maritime Homeland Security and Defense Seam

While the terms MHLA and MHLA and their distinct missions continue to solidify, there remains a transitive seam between these two missions. One way to better understand this “seam” is by considering the spectrum of threats to the homeland. NORTHCOM calls it “the ‘seam’ between war and crime.”³¹ The premise behind this “spectrum” is simply that at one end of the spectrum there are threats that are clearly military operations against the U.S. An example of this is the Soviet ballistic missile submarine patrols conducted against the U.S.

²⁹ Paul Mchale, “Statement by Assistant Secretary Of Defense for Homeland Defense Before the Subcommittee on Readiness House Armed Service Committee United States House of Representatives,” 13 March 2003.

³⁰ United States Department of Defense, *Department of Defense Homeland Security Joint Operating Concept (draft)*, (12 December 2003 [cited on 12 January 2004]); available from the World Wide Web @ , http://www.dtic.mil/jointvision/draft_hls_joc.doc, Pg. 15

³¹ Ibid. Pg. 8

during the Cold War --- deterrence, mitigation, and response are unmistakably Homeland Defense and thus DOD lead missions.

At the other end of the spectrum is the crime threat, which is unmistakably a law enforcement-related threat. Examples of this include the flood of illegal immigration at our land borders with Mexico and maritime borders with Cuba and Haiti. These are clearly classified as Homeland Security threats and primarily law enforcement, specifically U. S. Customs and U.S. Coast Guard, missions.

Threats operating within this seam range from trans-national terrorists like Al Qaeda to domestic terrorists like Timothy McVeigh and Terry Nichols. The seam between “war and crime” is the challenge within this spectrum that will require advanced interagency coordination and “outside the box” thinking towards the possible threats that could try to exploit this seam. Who has both the responsibility and authority to handle “seam” threats?

One example of threats in the “seam” is the scenario of a WMD entering the U.S. via container ship. Suppose there is actionable intelligence that the suspect vessel is approaching the U.S. with hostile intent. If that vessel were not demonstrating hostile intent, would DOD forces be limited by their Rules of Engagement in international waters --- even if they were first to arrive on the scene? Department of Defense, Coast Guard and or U.S. Customs coordination to effectively interdict and obtain timely changes in ROE from the Combatant Commander’s needs to be considered in advance, potentially through further war gaming.

If hostile forces can perceive a seam in the responsibilities, authority, or a capability mismatch, how might this manifest itself? Could strategically targeting the maritime-based U.S. economy reveal pressure points within this seam that could be exploited? This remains an area for further high priority inter-agency research and coordination.

C. DEFENSE VS SECURITY IN NORTHCOM’ S MARITIME MISSION

NORTHCOM apparently distinguishes itself as a command exclusively intended for Homeland Defense vice Security. A draft Department of Defense

Joint Operating Concept white paper published on 12 December 2003 identifies three Mission areas where NORTHCOM's key responsibilities and mission priorities reside: (1) Homeland Defense, (2) Civil Support, and (3) Emergency Preparedness.³² These three mission areas and subsequent mission sets as related to the Maritime Domain are explained below.

1. Maritime Homeland Defense: Extraordinary Circumstances

The first key mission area identified by NORTHCOM is Maritime Homeland Defense. This mission area is considered an extraordinary circumstance whereby the Department of Defense:

would be required to execute its traditional military missions in defense of the people and territory of our country. In these instances, DOD is supported by other federal agencies. Plans for such contingencies, to the extent possible, would be coordinated, as appropriate, with the National Security Council and with the Homeland Security Council.³³

Maritime Homeland Defense is the primary mission area wherein NORTHCOM, under standing orders from the Secretary of Defense and the President, will likely assume the role as Lead Federal Agency (LFA) and will be supported by other federal and state agencies. Maritime mission sets that fall into this category include, but are not limited to maritime interdiction, mine warfare, air defense, undersea warfare, and special warfare.

One example of this type of mission is Operation Noble Eagle. As an immediate response to the 2001 September 11 attacks, an unprecedented sortie of carrier battle groups on the East and West Coast took place to protect the coastlines and approaches and monitor the skies against a potential second wave of attacks, while Navy E-2 Hawkeyes provided expanded air and surface surveillance coverage of both coasts.

³² Ibid. Pg. 1

³³ Donald H. Rumsfeld, "Transcript of Testimony by Secretary of Defense Donald H. Rumsfeld on Homeland Security before Senate Appropriations Committee," [on-line] (7 May 2002 [cited on 20 October 2003]); available from the World Wide Web @ <http://www.dod.mil>

2. Civil Support

The second key mission area identified by NORTHCOM is Civil Support. Under NORTHCOM, Civil Support may be directed “to provide the means to assist civilian authorities in order to save lives, protect property and public health and safety, or to lessen or avert the threat of a catastrophe.”³⁴ DOD and NORTHCOM would act in a supporting role of civilian authorities.

Under this mission area, maritime mission sets may include, but are not limited to Military Assistance to Civil Authorities (MACA) and Military Assistance for Civilian Law Enforcement Agencies (MSCLEA). The *Homeland Security Joint Operating Concept*, however, makes clear that Civil Support Missions by title 10 forces will only be undertaken when “its involvement is appropriate and when a clear end state for the Department’s role is defined.”³⁵

Some examples of these operations in the maritime domain include the 12 September 2001 deployment of the hospital ship USNS Comfort to New York Harbor for Civil Support. Comfort reached New York three days after the World Trade Center attacks with orders to provide support services to New York emergency personnel and serve as a rest center for thousands of disaster relief workers.³⁶

Other examples of Civil Support mission sets include ongoing U.S. Navy involvement in counter-drug operations in cooperation with the U.S. Coast Guard and U.S. Customs, Maritime Homeland Security patrols by Navy and Coast Guard crews aboard U.S. Navy *Cyclone* class patrol craft, and the continuing development of the Joint Harbor Operations Centers (JHOC) in Norfolk and San Diego.

³⁴United States Department of Defense, *Department of Defense Homeland Security Joint Operating Concept (draft)*, (12 December 2003 [cited on 12 January 2004]); available from the World Wide Web @ , http://www.dtic.mil/jointvision/draft/hs_joc.doc, Pg. 15

³⁵*Ibid*, Pg 15

³⁶Military Sealift Command Public Affairs, “USNS Comfort Providing Comfort In New York,” [online] (19 September 2001 [cited on 12 January 2004]); available from the World Wide Web @ <http://www.chinfo.navy.mil>

3. Emergency Preparedness

The third key mission area identified by NORTHCOM is Emergency Preparedness. This mission area is planned to “ensure DOD processes, procedures, and resources are in place to support the President and Secretary of Defense in a designated National Security Emergency.”³⁷ Under this mission area, maritime mission sets may include Continuity of Operations (COOP) missions.

COOP, delineated under Presidential Decision Directive, “requires federal agencies to develop COOP plans for essential operations. These COOP plans were viewed as a unifying concept not to replace existing plans but, instead, to be superimposed if and when a problem threatens a serious disruption of agency operations.”³⁸

One mission essential naval component for NORTHCOM in this mission area may be the utilization of two existing Fleet Air Reconnaissance Squadrons, VQ-2 and VQ-3 stationed at Tinker Air Force Base in Oklahoma. These Navy squadrons fly the E-6B communications relay and strategic airborne command post aircraft that provide “survivable, reliable, and endurable airborne command, control, and communications between the National Command Authority (NCA) and U.S. strategic and non-strategic forces.”³⁹

VQ-2 and VQ-3 have been under operational control (OPCON) of the US Strategic Command (STRATCOM) since 1993 while reporting to the U.S. Navy’s Patrol Wings Pacific for administrative purposes.⁴⁰ Because this platform is capable of dual missions as “strategic relay” and “airborne command center,”

³⁷ United States Department of Defense, *Department of Defense Homeland Security Joint Operating Concept (draft)*, (12 December 2003 [cited on 12 January 2004]); available from the World Wide Web @ <http://www.dtic.mil/jointvision/drafts/joc.doc> Pg 40.

³⁸ PDD 67: *Enduring Constitutional Government and Continuity of Government*, [on-line] (1998 [cited on 12 January 2004]); available from the World Wide Web @ <http://www.emergency-management.net>, Pg. 1

³⁹ United States Navy Fact File, “E-6 Mercury, United States Department of Defense,” [on-line] (24 June 2003 [cited on 13 January 2004]); available from the World Wide Web @ <http://www.chinfo.navy.mil>

⁴⁰ Jane's, “Janes Electronic Mission Aircraft 01: Boeing E-6A/B Mercury,” [on-line] (20 June 1998) [cited on 8 February 2004]; available from the World Wide Web @ <http://www4.janes.com>

should the squadrons remain under OPCON of STRATCOM? Under what circumstance or arrangement might OPCON shift to NORTHCOM?

D. THE MARITIME DEFENSE CHAIN OF COMMAND

Because the U.S. enjoyed an ocean buffer zone between itself and hostile nations, little attention has been paid in the past to maritime defense except in times of war when aggressors threatened U.S. waters and the maritime trade.⁴¹ NORTHCOM's Commander also wears a "dual hatted" Combatant Commander (COCOM) role commanding North American Air Defense Command (NORAD), a bi-national (United States and Canada) organization that since 1957 has provided surveillance and control of the U.S. and Canadian Airspace to validate and warn of an imminent air attack. In a testimony before Congress immediately after 9/11, General Ralph E. Eberhart, then Commander In Chief North American Aerospace Defense Command stated that NORAD's aerospace control and air defense missions have:

traditionally been oriented to detect and identify all aircraft entering North American airspace, and if necessary, intercept potentially threatening inbound air traffic. . . Based on the recent events, we are now also focused on threats originating within domestic airspace such as hijacked aircraft. While we have adjusted to provide a rapid response to domestic air threats, we continue to execute our previously assigned missions.⁴²

NORAD has been an established command for forty-six years. While it may take another 9/11-style attack to validate how NORAD remains relevant to homeland defense, NORAD has an existing and proven intelligence, space, and air command architecture in place to support air defense of the U.S. There is no maritime equivalent to NORAD.

Admiral Vern Clark, Chief of Naval Operations, has echoed this same sentiment in several public statements since 9/11 including his remarks at the

⁴¹For a comprehensive look at coastal defense in the U.S. see Peter M. Swartz, "Forward ... From the Start: The U.S. Navy & Homeland Defense: 1775-2003," (February 2003 [cited on 7 January 2004]); available from the World Wide Web @ <http://www.history.navy.mil>

⁴²General Ralph E. Eberhart, "Statement Before the United States Senate Armed Services Committee, [on-line] (25 October 2001 [cited on 7 January 2004]); available from the World Wide Web @ <http://www.senate.gov>

Naval-Industry R&D Partnership Conference in Washington, D.C. on August 15, 2002 where he said

I'm convinced we need a NORAD for maritime forces. The effect of these operations will extend the security of the United States far seaward, taking advantage of the time and space purchased by forward deployed assets to protect the U.S. from impending threats.⁴³

The purpose of this section is to evaluate the maritime defense chain of command and ask the question: Do we need a maritime NORAD?

1. Maritime Defense Zones

The nearest facsimile of NORAD were the Maritime Defense Zones (MARDEZ) and Naval Coastal Warfare. Established on March 7, 1984 through a Memorandum of Agreement between the Secretary of Transportation and the Secretary of the Navy, MARDEZ (MDZ) remained the standing chain of command for Maritime Homeland Defense prior to 9/11.

MARDEZ split the Continental U.S into two jointly staffed "3-star" commands and zones: Atlantic and Pacific. These commands were third-echelon Navy commands that reported to their respective Fleet Commanders but were under the command of the Coast Guard.⁴⁴ The intended role for the MDZ was to:

Provide an integrated Navy-Coast Guard approach to waterborne port defense and protection of critical infrastructure, high value sea lift assets and naval units . . . MDZ focuses on the vulnerable end-nodes of the sea lines of communication: the seaports of embarkation and debarkation.⁴⁵

The MDZ was created to counter the Soviet threat against critical port infrastructure and sea lines of communication (SLOC). There is no record of the MDZ ever having been activated; it has only functioned in its secondary role of executing contingency operations primarily by deploying Naval Coastal Warfare

⁴³Admiral Vern Clark, "Remarks, 2002 Naval-Industry R&D Partnership Conference," (15 August 2002 [cited on 15 January 2004]); available from the World Wide Web @ <http://www.news.navy.mil>

⁴⁴Karen D. Smith and Nancy F. Nugent, "The Role of Maritime Defense Zone in the 21st Century," Center for Naval Analysis, Alexandria, Va.: September, 2000, Pg. 4-5.

⁴⁵ Ibid. Pg 5.

units (NCW) or Coast Guard Port Security Units (PSU) in support of operations outside of the Continental U.S. These include:

- NCW deployments to Operation Uphold Democracy (Haiti).
- NCW deployments to Operation Maintain Democracy (Haiti).
- PSU and NCW deployments for force protection of units training at Vieques Island, PR. (during civil protests against the training)
- NCW deployments during Operation Desert Storm.
- NCW deployments to Operation Enduring Freedom.

The only known operations of MDZ units within the Continental U.S. are: (1) a 1998 PSU deployment to Seattle Washington, to provide waterborne security for the President and other World Trade Organization leaders during the WTO Summit; and (2) Initial deployments of NCW and PSU to New York harbor, the Potomac River, and other potentially vulnerable ports in the opening moves of Operation Noble Eagle in the immediate post-9/11/01 timeframe.⁴⁶

While the MDZ structure for MHL D has not been officially abandoned, the change in maritime threats from conventional to asymmetric, as well as the use of MDZ assets for “away vs. home games” makes the concept appear dead in the water. It is significant to note that on September 11, 2001, during a time of extreme perceived vulnerability to the U.S. homeland, the MDZ construct was not activated.

2. Current MHLS/ MHL D Chain of Command

With its establishment, NORTHCOM is responsible for conducting MHL D and supporting MHLS. NORTHCOM’s command structure distributes military responsibility among three component commanders: Joint Forces Air Component Commander (JFACC), Joint Forces Land Component Commander (JFLCC), and Joint Forces Maritime Component Commander (JFMCC).

As stated in Chapter I, NORTHCOM has no permanently assigned maritime forces, only a skeleton staff for intelligence and planning. In contrast to the other area unified commands, which have naval forces “chopped” in their respective theaters regularly, this lack of any assigned naval forces makes

⁴⁶ Ibid. Pg. 23.

NORTHCOM appear like a paper tiger. However, in the context of history, this deficit in assigned forces should not be a surprise. When Central Command was established in on 1 January 1983, like NORTHCOM, it also had no permanently assigned forces. Operational forces go where they are needed most.

NORTHCOM's JFMCC is U.S. Naval Forces Northern Command (NAVNORTH). NAVNORTH, located in Norfolk, Va., is a multi-tasked command. The NAVNORTH staff is triple-hatted as also Commander Atlantic Fleet (CLF) and Commander Fleet Forces Command (CFFC). Component commands under this structure are then sub-divided between the east and west coast fleet concentration areas.

The east coast component is designated as NAVNORTH Fleet East (NAVNORTHFLT-E), in Norfolk, VA, and is administratively assigned as Commander Second Fleet (C2F) under CLF until assigned to NAVNORTH for HLD missions. Similarly, the west coast component is NAVNORTH Fleet West (NAVNORTHFLT-W), in San Diego, CA. and is administratively assigned as Commander Third Fleet (C3F).

While Coast Guard forces may be assigned to the JFMCC for MHLA missions, according to the Unified Command Plan, they are normally under their own command structure of regional commanders for MHLS. Unlike Navy Commands, the hierarchy for MHLS missions begins with Commandant U.S. Coast Guard, who is under civilian control of the Department of Homeland Security. Like the Navy, the subordinate commands are divided between east coast and west coast commands. USCG Atlantic Area (LANTAREA), located in Portsmouth, VA, is responsible for operations on the U.S. east coast and the Gulf of Mexico. Commander USCG Pacific Area (PACAREA), located in Alameda, CA, directs USCG operations on the west coast of the US, Alaska, Hawaii, and the Pacific Rim.

Unlike the Navy, subcomponents of this command structure are further divided into USCG Districts responsible not only for harbors and coastal approaches but also navigable inland waterways. Under LANTAREA command

are Districts 1, 5, 7, 8, and 9. Under PACAREA command are Districts 11, 13, 14, and 17. Within the Coast Guard, for specific ports, each Captain of the Port has unique and overriding authority to control security and other aspects of port operations within his maritime domain, subject to District and Area guidance.

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IV. COMPETING MISSION PRIORITIES AND SERVICE CULTURE CHALLENGES

A. INTRODUCTION

One of the greatest challenges for NORTHCOM will be how to mesh and coordinate the two main maritime defense/ security components within its structure. In September of 1998, then Chief of Naval Operations Jay Johnson and Coast Guard Commandant Admiral James Loy signed the National Fleet Policy Statement. The joint agreement was intended “to ensure that as the Coast Guard and Navy move to recapitalize their forces in the 21st century, they synchronize planning, training, and procurement to provide the highest level of maritime capability for the nation’s investment.”⁴⁷

Maritime strategy, force structure, and policy changes may take months or years to implement. The measurement of change, however, is tangible. In the maritime domain, it can be measured by changes in mission priorities, funding for certain programs, or joint cooperation in projects, exercises, and operations.

Another challenge to effecting a cohesive maritime security/ defense force is overcoming obstacles from service culture. Service culture is defined as “a system of shared values that define what is important and norms that define appropriate attitudes and behaviors for organizational members telling them how to feel and behave.”⁴⁸ This system of values and norms may evolve from historical experience, missions, and indoctrination. Service culture is embedded throughout the past, present, and future mission priorities. It will take much longer to align service culture to implement maritime security/ defense.

This thesis has found that the U.S. Navy and U.S. Coast Guard only comprise a “notional” national fleet. While there is joint cooperation between the Navy and Coast Guard, competing mission priorities and service cultures remain

⁴⁷United States Coast Guard, “21st Century Preview,” [on-line] (January 2001 [cited on 14 January 2004]); available from the World Wide Web @ <http://www.uscg.mil>

⁴⁸C. O'Reilly, & J. Chatman, “Culture as social control: Corporations, Cults, and Commitment” *Research in Organizational Behavior*, 18, 157-200

at odds with forming a cohesive force for MHL and MHL. This chapter will look at both the mission priorities and cultural challenges to achieving a more cooperative, holistic maritime force posture.

B. U.S. COAST GUARD MISSION PRIORITIES BEFORE AND AFTER 9/11

Of the two maritime services, the Coast Guard has seen the most dramatic shift in demand for MHL/MHL missions. While maritime security and defense has been among its core mission sets before 9/11, an unconceivable attack on the U.S. homeland measured low on the priority scale compared to the many other routine, but critical Coast Guard mission sets.

Post 9/11 maritime strategies have swung the pendulum to the other direction. Some observers believe that the pendulum has swung too far and that now the Coast Guard is neglecting some of its core competencies.

1. U.S. Coast Guard Mission Priorities Before 9/11

The Coast Guard is the only U.S. armed service with law enforcement authority. While maritime security has always been a coast guard mission, the service's strategic priorities were principally focused on interdicting illegal migration, enforcing maritime safety, maritime environmental protection, navigation aid maintenance, performing rescue operations, and drug enforcement.

On March 25th, 1999 President Clinton signed Executive Order 13115 establishing the Interagency Task Force on Coast Guard Roles and Missions. The task force consisted of sixteen senior Administration members who undertook this effort to identify and prioritize current and future Coast Guard roles, missions, and functions. The task force studied and recommended which missions should be added, maintained, reduced, or eliminated.⁴⁹ The effort consisted of research, field trips, review of stakeholder interviews, and debate. The results appear in the task force's report, signed on December 3rd, 1999.

Because the last Coast Guard study of this scope was completed in 1982, this nine-month study recommended major course changes for a long-term

⁴⁹"Task Force Established on Coast Guard Roles and Missions," [on-line] (16 April 1999 [cited on 16 February 2004]); available from the World Wide Web @ <http://www.dot.gov>

strategic vision through 2020. The findings from this task force give a snapshot of the Coast Guard's pre-9/11 mission priorities. Critical missions which were reported to be Coast Guard priorities for a range of motives included:⁵⁰

- Maritime Security
- Alien Migrant Interdiction Operation
- Drug Interdiction National Defense
- Protection of Natural Resources
- Living Marine Resources
- Marine Environmental Protection
- Maritime Safety

This report found that the two mission areas considered most important to national security by the Coast Guard, and the missions that drew the most resources were Alien Migrant Interdiction Operations and Drug Interdiction National Defense. Both mission sets have consumed the bulk of Coast Guard operational assets within the past five years preceding the task force study.

a. Alien Migrant Interdiction Operations

The Coast Guard has experienced a surge in Alien Migrant Interdiction Operations since the 1980 mass migration from Cuba, known as the Mariel Boat Lift. Since the Mariel Boat Lift

migrant interdiction has become a substantial Coast Guard mission that has, over the past five years, required about 5% percent of the Coast Guard's operating budget, or about \$160 million per year, excluding mass migration response years.⁵¹

Through 2001, there have been three instances in the past 20 years where instability in Cuba and Haiti has threatened a mass exodus. Because the Coast Guard is the lead federal agency in maritime interdiction of alien migration under the "Mass Immigration Emergency Plan," it has had to maintain a surge capability for air, land, and sea elements and has diverted its assets during periods of unrest in the Caribbean.

⁵⁰ Interagency Task Force on Coast Guard Roles and Missions, *Coast Guard of the 21st Century*, [on-line] (December 1999 [cited on 6 January 2004]); available from the World Wide Web @ <http://www.uscg.mil>, Chapter 2

⁵¹ Ibid. Ch 2.

Additionally, the Coast Guard has been involved in interdicting what it calls *Routine Illegal Migration* “usually [involving] relatively small numbers of migrants (1-200 per trip). These routine migration attempts have resulted in an average of nearly 5,000 interdictions per year.”⁵² This demand has not abated since 9/11.

b. Drug Interdiction

The Coast Guard is the lead federal agency for maritime drug interdiction. As the lead agency, its mission is to stem the flow of drugs into the U.S. by denying smugglers use of the air and maritime approaches, including the Caribbean, Gulf of Mexico and Pacific approaches. Nearly 52% of all government drug seizures are performed by the Coast Guard.⁵³

In the period between 1994 and 2001, the Coast Guard progressively increased their number of arrests and seizures of Cocaine, Marijuana, and Heroin by approximately 20% annually.⁵⁴ In their report, the roles and missions task force admits that it is nearly impossible to predict the increase or decrease in supply or demand. Therefore, they conclude

It will be important to maintain an effective deterrent to maritime smuggling. Future interdiction requirements should be developed taking into account two critical aspects: the importance of sufficient flexibility in existing forces to take the offensive (in responding to intelligence cueing of both operational and strategic variety) and to establish sufficient deterrent presence independent of ebbs and flows of contraband to deny the use of maritime smuggling routes.⁵⁵

Until 9/11 drug smuggling was viewed as a clear and present danger to national security and a top priority for Coast Guard asset and funding allocation.

⁵² Ibid. Ch 2.

⁵³ United States Coast Guard, “Drug Interdiction,” [on-line] (February 2004 [cited on 22 February 2004]); available from the World Wide Web @ <http://www.uscg.mil>

⁵⁴ United States Coast Guard, “Drug Seizure Statistics for 1994-2002,” [on-line] (January 2003 [cited on 20 February 2004]); available from the World Wide Web @ <http://www.uscg.mil>

⁵⁵ Interagency Task Force on Coast Guard Roles and Missions, *Coast Guard of the 21st Century* Chapter 2, [on-line] (December 1999 [cited on 24 February 2004]); available from the World Wide Web @ <http://www.uscg.mil/>

2. U.S. Coast Guard Mission Priorities After 9/11

Maritime Homeland security, until September 11, 2001 was understood as being a mission priority. In their report, the missions and roles task force acknowledged that in the decades ahead, transnational terrorist threats of asymmetric warfare might be directed against the U.S. However, concerns over an aging Coast Guard fleet, high op-tempo with limited resources, and other daily national security mission priorities took precedence over MHLS.

9/11 events have swung the operational pendulum in the other direction. Beginning on September 11, 2001, the Coast Guard has made MHLS its top mission. On that morning, Coast Guard air and sea assets were diverted from operating areas in the Caribbean, North Atlantic, and Eastern Pacific to bolster protection of coastal areas, critical ports, and inland waterways from a potential follow-on maritime attack. Naval security zones were established to protect critical infrastructure and Navy ships.

In fact, before 9/11, the Coast Guard committed less than 2 percent of its operations on maritime security. Immediately after 9/11, 50 to 60 percent of time and resources was spent on protecting U.S. ports.⁵⁶ Other actions taken since September 11, 2001 included:⁵⁷

- Activation and assignment of 4 of its 6 Port Security Units (PSUs) to protect the ports of New York, Boston, Seattle, and Los Angeles/Long Beach.
- Boarding and inspecting suspect inbound vessels.
- Escorting cruise ships into and out of port.
- Escorting oil tankers into and out of Valdez, Alaska.
- Instituting new regulations requiring inbound ships to provide 96-hour advance notice of arrival.
- Deployment of Sea Marshals for inbound/ outbound commercial transits.

⁵⁶Council on Foreign Relations, Terrorism Q & A: Ports, [on-line] (January 2004 [cited on 20 January 2004]); available from the World Wide Web @ <http://www.terrorismsanswers.com>, Pg 1

⁵⁷ Ronald O'Rourke, "Homeland Security: Coast Guard Operations—Background and Issues for Congress," Congressional Reporting Service, Washington D.C.: January 28, 2002

As the case studies in chapter five will show, the Coast Guard is unable to sustain the intensity of these maritime security operations. The same sources cited in the previous subsection on mission priorities before 9/11 will show that there was a sharp drop in both drug and illegal migrant interdiction for the period of 2001-2002. As of February, 2004 a sustainable balance between maritime security and other missions has not been achieved. Notably, however, the “other” threats to national security have not yet abated.

A near-crisis in Haiti from late February 2004, averted only because the former president Jean Bertrand Aristide fled the country, nearly triggered another mass exodus from the island. This exodus was already beginning to show itself to the Coast Guard. Within four days, the Coast Guard intercepted 546 Haitians 50 miles off the coast of Haiti, totaling 694 Haitians for the month of February.⁵⁸ While this is not considered an exodus, assets have been diverted away from the MHLS mission to respond to this crisis. Balancing traditional vs. MHLS priorities will be a continuing challenge for the Coast Guard.

C. U.S. NAVY MISSION PRIORITIES BEFORE AND AFTER 9/11

To understand the possible MHLS/ MHLA structural challenges for NORTHCOM, a good starting point is to examine the differences in mission priorities for the Navy before and after 9/11. While the strategic vision changed between the post-Cold War peace dividend era and the new era of a Global War on terror ushered in by 9/11, it is important to understand that the Navy’s force structure and service culture is changing at a much slower pace.

For this thesis, one good measure for understanding the structural challenges facing NORTHCOM is to take a snapshot of U.S. Navy strategy and vision from 1989 (the end of the Cold War) to just before the October 2000 USS Cole incident. This period contrasts well against the current vision in a post-Cole, post-9/11 world.

⁵⁸ Associated Press, “More Than 500 Haitians Taken Into U.S. Custody,” [on-line] (February 26 2004 [cited on 28 February 2004]); available from the World Wide Web @ <http://www.foxnews.com>

1. U.S. Navy Roles and Mission Priorities, 1989-2001

At the draw down of the Cold War, marked by the rapid disintegration of the Soviet Union, the missions and priorities of the U.S. Navy were somewhat mismatched with its Cold War era capabilities. The Navy's roles and mission priorities during this period are documented in the three published operational concepts during the 1990's. The first was *From the Sea* in 1992, followed by *Forward . . . From the Sea* in 1994, and finally *Forward from the Sea, The Operational Concept* in 1997. The apogee of these strategies is a focus on "away" games.

The Cold War strategy of "blue water" and chokepoint operations against an equally powerful aggressor in order to keep the sea lines of communication open was overhauled in 1992 with . . . *From the Sea*. This white paper shifted the strategic vision of the Navy from open ocean operations to a Navy and Marine Corps strategy of expeditionary power projection further away from the U.S. homeland and into the distant littorals in response to overseas regional challenges. The strategic mission priorities stressed in this paper are:⁵⁹

- Strategic deterrence and defense
- Forward presence
- Crisis response
- Reconstitution
- Command, Control
- Surveillance
- Battlespace Dominance;
- Power Projection
- Force Sustainment.

In 1994, *Forward...From the Sea* supported the same mission priorities in as the preceeding strategic paper. Because the nation was enjoying a post-Cold War and post-Desert Storm peace dividend, the purpose of the paper was to make the Navy still appear relevant.

⁵⁹. . . *From the Sea: Preparing the Naval Service for the 21st Century*, [on-line] (September 1992 [cited on 05 March 2004]); available from the World Wide Web @ [http:// www.chinfo.navy.mil](http://www.chinfo.navy.mil)

Because we are a maritime nation, our security strategy is necessarily a transoceanic one. Our vital interests—those interests for which the United States is willing to fight-- are at the endpoint of "highways of the seas" or lines of strategic approach that stretch from the United States to the farthest point on the globe.⁶⁰

The theme was an emphasis on peace time operations or Military Operations Other Than War (MOOTW). This strategy also placed an emphasis on "away" games, except closer to foreign shores and further from ours. For example, one of the missions showcased in this paper was the ability of forward-deployed naval forces to contribute to humanitarian assistance and disaster-relief. Successful relief efforts in the Philippines, Bangladesh, and Rwanda are cited as examples. Interestingly, in 1994 there were thirty-six declarations of major disasters in the U.S. reported by the Federal Emergency Management Agency (5 were along U.S. coasts).⁶¹ There was no mention of assistance or ability to assist in these "home" scenarios --- the focus continues on "away" games.

Published in 1997, *Forward . . . From the Sea, The Navy Operational Concept* validates and re-affirms the priorities set in *Forward . . . From the Sea*. The message put forth was instead an alignment with the 1996 CJCS Joint Vision 2010 and its concepts. The emphasis was on examining existing operational concepts, doctrine, force organization, and possibilities for innovation in future systems and platforms to meet the Navy's forward deployed, forward engaged vision.⁶²

2. U.S. Navy Roles and Mission Priorities 2001- Present

Sea Power 21 marks a post 9/11 strategy that combines the blue water war-at-sea strategy of the 1980's with the forward deployed, forward engaged, littoral strategy of the 1990's into "a broadened strategy in which naval forces are

⁶⁰*Forward . . . From the Sea*, [on-line] (November 1994 [cited on 4 March 2004]); available from the World Wide Web @ <http://www.chinfo.navy.mil>, Pg. 2

⁶¹Federal Emergency Management Agency, "1994 Disaster Activity," [on-line] (January 1995 [cited on 22 February 2004]); available from the World Wide Web @ <http://www.fema.gov/>

⁶²*Forward . . . From the Sea*, [on-line] (November 1994 [cited on 4 March 2004]); available from the World Wide Web @ <http://www.chinfo.navy.mil>, Pg. 4

fully integrated into global joint operations against regional and transnational dangers.”⁶³ This strategy establishes three elemental pillars of naval capabilities: (1) Sea Strike, (2) Sea Shield, (3) Sea Basing.

Sea Strike is the ability to project precise and persistent offensive power from the sea; Sea Shield extends defensive assurance throughout the world; and Sea Basing enhances operational independence and support for the joint force. These concepts build upon the solid foundation of the Navy-Marine Corps team, leverage U.S. asymmetric advantages, and strengthen joint combat effectiveness.⁶⁴

These capabilities are supported by innovative administrative, training, and logistics concepts known as *Sea Trial*, *Sea Warrior*, and *Sea Enterprise*. Finally, the *Force-Net* concept incorporates all the “Sea” elements into an integrated force making “network-centric” warfare a reality.⁶⁵ While the primary focus in this strategy is on how to better fight “away” games and also defend the force, there is some mounting attention being given to getting prepared to play “home” games.

a. Traditional Focus on “Away” Games

Naval strategy remains focused on deterring forward in peacetime, responding to crises, and fighting and winning the nation’s wars away from the homeland. A corner-stone of this strategy is the newly developed Fleet Response Plan instituted in December 2003.

Under the Fleet Response Plan, ships returning from deployment immediately begin their maintenance and re-fit cycle. After the maintenance cycle, ships are then progressively classified as “emergency surge capable,” then “surge ready” until six months before their next scheduled deployment, when

⁶³Admiral Vern Clark, “Sea Power 21 Series – Part I,” *Proceedings*, [on-journal] (October 2002 [cited on 5 March 2004]); available from the World Wide Web @ <http://www.usni.org>, Pg. 1

⁶⁴Ibid. Pg. 2.

⁶⁵Naval Warfare Development Command, “Sea Power 21” at <http://www.nwdc.navy.mil>

they are classified “routine deployable.”⁶⁶ Through this initiative, six Carrier Strike Groups could surge forward within thirty days, followed by two more if necessary.

b. New Post-9/11 Focus on “Home” Games

Before 9/11 the Navy was already beginning to prepare in a limited scope for “home” games. With the attack on the U.S.S. Cole, the Navy realized that the vulnerabilities to its surface combatants existed not only in foreign ports, but in U.S. ports as well.

Naval station and battle group commanders implemented random security measures, demanded a heightened posture of Anti-Terrorism/ Force Protection, and performed numerous exercises to prepare units for this potential threat both at home and abroad. Navy leaders also liaised with their Coast Guard counterparts for inbound/ outbound transit escorts of surface ships, aircraft carriers, and submarines within the inland waterways. The focus of these measures, however, was limited to protecting military or “hard” targets. “Soft” targets such as critical infrastructure, ports of embarkation/ debarkation, and the civilian merchant industry remained largely unconsidered and unprotected.

While the thrust of Navy operations remains forward presence, forward dominance, “away” games some focus has been placed on maritime defense since 9/11 beyond just force protection. On 5 November 2001, under a joint agreement between the Coast Guard and the Navy, four Cyclone-Class Navy Patrol Coastal (PC) ships were transferred to OPCON of the Coast Guard on the Atlantic Coast and two PCs were later assigned to the Coast Guard on the Pacific Coast. The ships continue to operate in support of our OPERATION NOBLE EAGLE, assisting the Coast Guard in MHLS.⁶⁷

⁶⁶David Brown, “Fleet Response Plan Will Require Radical Shift in Navy’s Mindset,” Defense News Media Group, [on-line] (22 September 2003 [cited on 29 February 2004]); available from the World Wide Web @ <http://www.defensenews.com>

⁶⁷“Navy, Coast Guard Join Forces For Homeland Security,” [on-line] (25 November 2001 [cited on 9 February 2004]); available from the World Wide Web <http://c21.maxwell.af.mil>

Since 2001, the Navy has been collaborating with the Coast Guard on the Joint Harbor Operations Center (JHOC) concept. The first JHOC, established in Norfolk during 2002, followed by one in San Diego in 2003, are staffed by both Navy and Coast Guard personnel and serve as 24/7 command and control centers for maritime awareness and security in those ports. Equipped with radar, surveillance cameras, and other sensors JHOCs have the ability to monitor the various approaches to the Chesapeake and San Diego Bays --- extending their range up to 12 nautical miles from the harbor entrance. These advances are pointing toward a potential synergy in creating a Maritime NORAD, but only if the MHLS patrols and JHOCs are extended beyond the scope of protecting fleet concentration areas. Resource constraints and service culture vie for top honors as the number one obstacle to achieving more effective MHLS/ MHL D capabilities throughout our extensive coastline, harbors, and inland waterways.

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V. TESTING THE MARITIME HOMELAND SECURITY/DEFENSE REGIME

A. INTRODUCTION

The current maritime construct for MHLS/ MHL D remains untested. Although a wargame is not the same as a real crisis, there are still some considerably valuable insights that can be drawn from experimenting with the unthinkable. This chapter examines two recent wargame case studies in MHLS/ MHL D that can provide some insights into the challenges facing NORTHCOM.

The November 2001 Maritime Homeland Security Wargame, held at NPS in Monterey, was the first major maritime wargame since 9/11 engaging Navy and Coast Guard staffs as well as federal, state, local, and private industry stakeholders. The April 2003 Maritime Homeland Security/ Defense Wargame, also held at NPS, was the first major maritime wargame conducted since the establishment of NORTHCOM.

Between these two wargames, valuable lessons have been documented to help deal with potential asymmetric seaborne attacks including worst-case scenarios. This chapter will examine these cases and present them within the context of the current maritime chain of command/ authority under NORTHCOM as a test against the original thesis question.

1. Why a Wargame as a Case Study?

Wargaming is a decision tool for military staffs. Through wargaming in a virtual environment, participants are able to challenge current norms of doing business, test new ideas and strategies, and share different perspectives on how to respond to multifarious scenarios. Wargame results are not predictive. While inputs may be and usually are deterministic, due to player composition and decision timing, any wargame output is stochastic. Iteration, however, may point to trends.

The MHLS/ MHL D wargames studied in this chapter tested operational doctrine, exposed seams in operational concepts, and discovered operational

limits to the maritime defense architecture not previously considered. As a consequence of these wargames, new and ground breaking approaches surface for solving the challenges ahead which inevitably emerge from an integrated perspective of the participants and the civil/ warfare communities they represent.

B. 2001 NPS MARITIME HOMELAND SECURITY WARGAME

The three-day Maritime Homeland Security Wargame, sponsored by Commander in Chief Pacific Fleet (CINCPACFLT) and Commander Coast Guard Pacific Area (PACAREA) took place on November 7-9, 2001 at the Naval Post Graduate School (NPS) in Monterey, Ca. While the wargame had been planned months before September 11, 2001, the game took on greater relevance less than two months after the 9/11 attacks.

One hundred-twenty senior officers and leaders representing federal and state level stakeholders, as well as private industry were assembled to “challenge assumptions and test operational limits”⁶⁸ in responding to a coordinated asymmetric terrorist attack against strategically vital ports along the U.S. Pacific Coast.

1. Game Objectives and Scenario/ Move Overview

The game opens from a USCG state of “new normalcy” of elevated security, what is now known as (Yellow) Elevated Condition under the current Department of Homeland Security Advisory System. The game is set during the opening moves of a West Coast multi-port U.S. military loadout to support a U.S. campaign in the Middle East (*adversary* was intentionally indistinct). The campaign is in response to the 9/11 attacks and a “notional Anthrax attack that killed over 1,000 Americans in major population concentrations. The ports of focus were the strategic ports of Los Angeles/ Long Beach, San Francisco, Oakland, Concord, and Puget Sound ports, including Indian Island.

The game’s battle rhythm consisted of five “moves” with each “move” representing a week’s time, and was set in real time (November-December 2001). At the end of each move, the stakeholder teams gathered for plenary

⁶⁸“Executive Summary, Final Report Maritime Homeland Security Wargame,” Naval Postgraduate School, Monterey, Ca.: November 2001.

sessions to discuss actions taken during the moves and to brief the next move. The main objectives of the game were:⁶⁹

- Establish the major Maritime Homeland Security operational requirements in the new threat environment.
- Identify who are the major stakeholders, determine their roles, and resolve what tasks must be integrated for operational success.
- Consider emerging policy and operational requirements.

While not an explicit objective of the game, one other question relevant to this thesis is: Can the U.S. (and the new NORTHCOM) defend against a coordinated asymmetric attack (home game) while effecting a Major Theater War (away game)? Below is a summary of the moves within the game, including the critical events and responses.

In the opening move (7-13 November 2001) the U.S. is coping with an Anthrax outbreak which was traced by F.B.I and other intelligence agencies to an unnamed Middle East Country. The same country believed responsible for the Anthrax outbreak is now “saber rattling” against an “oil rich” neighbor and U.S. ally. The President and Congress respond by authorizing the mobilization of a major troop deployment via West Coast ports of embarkation/ debarkation into the Middle East Theater.

The first significant event is the report that the container ship *Maersk Katarina* catches fire off the coast of Long Beach (event 1).⁷⁰ A follow-on intelligence request by Command (PACAREA) is expanded upon by revealing that three other containers from the same shipper in Pusan have caught fire in Tacoma, Washington (event 5). In response to another intelligence request, the game scenario reveals that the *Hyundai Pioneer* delivered the three containers, and is now underway for Long Beach. An intelligence inject reports suspicious activity by men of Middle Eastern origin seen videotaping the arrival of the

⁶⁹Dr. Kathleen Robertson, *Maritime Homeland Security Wargame Game Book*, Naval Postgraduate School, Monterey, Ca.: November 2001.

⁷⁰ The events were numbered in the final report and are included here for follow-on research.

Catalina ferry. While the move was intended as a scene setter for later follow on events, the stakeholders took the following key actions during this move:

- USCG District 13 (Washington) orders Captain of the Port (COTP) Puget Sound not to permit *Maersk Katarina* into port.
- USCG District 13 coordinates Strike team allocation with National Strike Force Coordination Center.
- Command recommends holding *Hyundai Pioneer* outside port of Long Beach. The vessel was later boarded and cleared as not a threat.
- Armed Sea Marshals were placed aboard the Catalina ferry, apparently deterring an attack.

In Move 2 (14-21 November 2001), one week after the mobilization order, U.S. troops, weapons, and equipment begin flowing into ports in California and Washington. Naval forces in Hawaii are prepared to deploy to augment the battle groups already in the Persian Gulf. U.S. Special Operations Forces and Army light forces have arrived in theater. War has not broken out but minor skirmishes along the border of the hostile country have begun drawing out casualties on all sides.

One significant event for this move is an alert by the Office of Homeland Security that a possible nuclear device might arrive in San Francisco Bay by 07 December (event 15). A follow-on intelligence assessment reports Al Qaeda may have a “nuke” capability. This report triggers a slew of responses from the Command and District level stakeholders including:

- Request for additional intelligence
- Request for availability of FBI/ DOE Nuclear Emergency Search Team.
- Discussion of maritime picture.
- USCG District 11 (LA/LB) directed to undertake aggressive HUMINT and LEA collection
- Higher Command request to DOD stakeholders for C2 structure.

- Higher Command Request for DOD to provide nuclear detection devices.

In Move 3 (21-27 November 2001), military operations in the Middle East continue to ramp up with several cross-border air engagements taking place throughout the week. Heavy infantry and combat support elements converge at the ports of embarkation in Oakland and Long Beach, ready to embark. Containerized munitions arrive in San Francisco/ Oakland for load-out and shipment to the Middle East.

The first significant event from this move is the distribution of an Office of Homeland Security memorandum citing unspecified threats regarding an attack against the WTC/ Ferry building on the San Francisco Embarcadero (event 23). Because Higher Command ordered Armed Sea Marshals placed on ferries, no further action is taken against this threat.

The second significant event is a CNN News report that the Liberian flagged crude oil tanker *Pacific Liberty* ignores demands to be boarded by USCG as it enters the Economic Exclusion Zone, approaching the California coast (event 26).

- Higher Command requests that DOD place Special Operations Forces on alert for non-compliant boarding of *Pacific Liberty*.
- Higher Command requests crew list and additional intelligence and is responded to with a report that crew list is in order and that there is no indication of a hijacking.
- DoD requests USCG direct consequence management in the event of an attack from the *Pacific Liberty*.
- USCG District 11 (LA/LB) requests DoD advise on availability of Army brown water vessels and California Air National guard armed helicopter support for augmentation to port security.

Two additional events in this move are inserted to set up for Move 4: (1) Joint Inter-Agency Task Force (JIATF) reports that the Middle East *adversary* plans on

shipping blistering agent ideal for aerial application via Canada (event 29); and (2) Office of Naval Intelligence indicates that North Korea is providing *adversary* country agents with submersible/ swimmer attack training (event 29).

In Move 4 (28 November – 04 December 2001), cross-border skirmishes continue between U.S. coalition forces and Middle East *adversary* forces. Troop and equipment load-outs are in progress at all associated West Coast ports. Intelligence and Warning (I&W) received over the past two weeks against follow-on attacks on the U.S. has the state and local law enforcement and force protection communities on a high state of alert.

During this move an apparent attack takes place on the U.S. The Office of Homeland Security reports of a possible mining of choke points in Puget Sound by the Middle East *adversary* (event 32). A USCG Cutter is damaged and the boarding party is reported missing when a vessel reporting itself as in distress explodes alongside (event 33). In a similar attack, a sailboat approaches the Concord ammunition piers and detonates itself, destroying the cranes at the site (event 34). Limpet mines were discovered attached to the hull of an MSC vessel in Oakland (event 36), and a Washington State ferry was over-flown and attacked by a crop duster armed with a blistering agent (event 37). The crop duster was tracked and confirmed to have later crashed into the Space Needle in Seattle, Washington, leaving it with severe damage (event 37). The Victoria Clipper, a hydrofoil-class ferry originating in Victoria, Canada, is hijacked en route to Seattle and diverts at high speed (40 knots) toward the Bangor Submarine Base via the Hood Canal, threatening SSBNs in port.

At this point, the stakeholders are saturated with tasking resources in response to the events and are required to do some “out of the box” thinking. Some of the key actions and responses are:

- Requests for additional intelligence.
- Increase of surveillance ordered at Puget Sound by USCG District 13 (Washington State).
- Request by USCG District 13 for Navy Mine Warfare resources to be deployed to Puget Sound.

- Inquiry by USCG District 13 regarding NOAA asset capability for mine detection.
- DoD prepares to deploy an Explosives Ordnance Disposal unit via Helicopter to suspected mine area and advises Command that Mine Counter Measure assets are ready to deploy.
- No action is taken regarding USCG cutter attacked while answering SOS call.
- No action was taken against attack on ammunition pier.
- To counter the limpet mine/ attack swimmer attack, USCG District 11 directs restriction of private and commercial to be controlled and authorized by the Captain of the Port and directs all USCG assets to carry concussion grenades.
- DoD also recommends deployment of MK 6 Marine Mammal System used for mine detection.
- The Puget Sound ferry was held outside of port and assets were directed to assist with decontamination.
- The District 13 (Washington State) staff acknowledges that there is no good surface capability to counter this high-speed hydrofoil threat.

In Move 5 (5-11 December 2001), Hard and soft targets on both coasts have been attacked. The president vows to “respond ‘in a dramatic’ fashion.” During the final move, a Carnival cruise ship is swarmed and attacked by 4-6 small boats detonating themselves at the ship’s waterline (event 38), and the Sausalito ferry is hijacked and headed towards pier 39 at full speed (event 39). Also, the *Phillips Marathon*, an LNG tanker bound from Alaska to Japan failed to report on schedule. Three of its crewmen were found dead at its Alaska terminal of origin (event 40).

2. Competing Tensions and Choices

As the stakeholder teams confronted escalating terrorist threats throughout the five moves, to the point of saturation, the teams validated three inherent tensions in the evolving MHLS/ MHL D related to this thesis:

- Port security demands vs. economic impact (of port closure).

- Innate cultural differences between the Coast Guard and the Navy on how to mitigate maritime threats.
- Balancing the “home” and “away” game resource challenges.

First, The stakeholders found early in the first move that the Coast Guard is unable to sustain MARSEC 1 with its present resources. The conventional wisdom would seem that an increase in the MARSEC level requires more resources. This game found that, in truth, it is easier to achieve MARSEC 3 than MARSEC 1 or MARSEC 2.

Under the MARSEC 3 security regime, the MARSEC level associated with a probable or imminent attack, a COTP has the authority to virtually shut down a port. The COTP can order a slew of measures including the suspension of loading and unloading cargo, suspend inbound and outbound transit, and increase security searches.

The competing tension found inherent with setting MARSEC 3 was shown in Move 1 when the intelligence reports implicated the *Hyundai Pioneer*, bound for the port of Los Angeles/ Long Beach (LA/LB) as a potential WMD delivery vessel. The first impulse for District 13 was to recommend closing down the port of Los Angeles /Long Beach for the duration of the military sealift loadout.

A response from the port was that closing the port cost \$50 billion/ year and that no other port could handle the volume of import and export handled by that sea port. Even after threats were progressively deemed as credible, imminent, and underway, there was no further recommendation or order to close the ports found in the summary of moves.

Second, cultural differences between the Navy and Coast Guard were extensively visible throughout the moves. One aspect of this cultural phenomenon is evident from opposing views on how to respond to a maritime threat. During the moves, both the Navy and Coast Guard participants reached back to their own service's strategic, tactical, and operational training and experiences when reacting to a threat. Captains of the Ports were more

comfortable using Coast Guard assets initially and reluctant to request Navy assets until they were inundated with threats.

To better illustrate, during the game there was a debate about what to do with the *Maersk Katrina*, the merchant ship reported on fire at the approaches to Puget Sound. The Navy stakeholders interpreted the intelligence on the *Maersk Katrina* as a vessel with hostile intent. The Navy's reach back to service culture led to a recommendation that the vessel be boarded, disabled, or sunk --- that it should not be permitted to enter U.S. territorial waters.

The Coast Guard, on the other hand surmised that the *Maersk Katrina* was not a threat. The Coast Guard stakeholders reverted to their culture of a rescue service. The Captain of the Port for Puget Sound was pre-occupied with planning a rescue of the *Maersk Katrina* and holding the vessel at the entrance to Puget Sound.

This scenario was intentionally left vague and open ended. The inference that there was a possibility that the *Maersk Katrina* carried a WMD was not confirmed. However, each service had already made up its mind on how to address the threat. A better understanding of each service's true capabilities and limitations, as well as the effect of service culture is essential to NORTHCOM's successful mission planning for MHLS/ MHL D mission.

Third, there was a deficit of debate regarding "home" vs. "away" games during the game. A common theme threaded throughout the game was the building momentum towards a major theater war overseas. There was no known discussion reflected in the final report relating to this tension that is clearly there.

The introduction to move two states that Pacific Fleet Naval Forces are ready for deployment from Hawaii to augment the naval footprint in the Persian Gulf. There is no mention of a discussion over holding up the deployment of these forces as the intensity of attacks strengthens in the following moves. Was there an assumption by the stakeholders that once combatants are earmarked for a Major Theater War, they are untouchable for homeland defense? Are third

echelon or reserve maritime forces the correct answer to augmenting the Coast Guard to repel a terrorist attack on the U.S. Homeland?

3. Findings and Recommendations

Because this was the first joint MHLS wargame since 9/11, the scenarios did not appear as far fetched as perhaps previous wargames of this nature. Some valuable findings and recommendations pertaining to this thesis included in the final game report are summarized here.

First, it was learned early in the game that in some ports, U.S. Coast Guard is unable to even meet Maritime Security (MARSEC) I protection levels with its current resources. This is the lowest level of protection expected under the “new normalcy” security regime. Recommendations by the key stakeholders were for the Commandant and Area Commanders to continue advocating for additional resources and advocacy to develop organic capabilities to support MARSEC I which are non-redundant with other agencies.

Second, even with some credible threats in the later moves, all levels of the MHLS C2 structure were hesitant in raising the MARSEC levels.⁷¹ This problem dovetails into the problems experienced with the limited resources mentioned in the preceding paragraph. The key stakeholders recommended that Command establish further guidance on raising/ lowering MARSEC levels for Operations NOBLE EAGLE and NEPTUNE SHIELD.

Third, the wargame found that DoD resources are not balanced for both Homeland Security (home game) and forward deployed (Away game) operations. Key stakeholders recommended DoD revise operational plans (OPLANS) for confirming/ meeting homeland security requirements.

Finally, there were a series of findings that suggested the need for a maritime security/ defense commander or a maritime NORAD. These findings included:

⁷¹ In discussions with Coast Guard Officers while helping design the 2003 MHLS/D Wargame, I found that one reason for this hesitation is that in some ports, as the MARSEC levels increase, local and state police involvement is required. The window for maintaining these security levels is very narrow (48-72 hours) because it draws state and local resources from their normal law enforcement duties.

- There was no central database from which the Coast Guard staffs could identify and locate DoD assets to call upon and pair up with MHLS tasking.
- There was no Common Relevant Operating Picture (CROP) where USCG could track the movements of contacts of interest, white shipping, or military assets.
- Operational seams were discovered throughout the wargame. These were areas where confusion remained as to whom would be in charge. An example cited was the crop duster event, where there was no reaction by the players because of confusion as to whom would be responsible for mitigating this type of attack.
- The Coast Guard lacks sensors that could assist in port security. Some existing sensor capabilities developed by DoD may already be available for deployment. New technology could be developed to deal with various surface, air, and subsurface threats.

C. 2003 NPS MARITIME HOMELAND SECURITY/ DEFENSE WARGAME

The three-day Maritime Homeland Security/ Defense Wargame, also sponsored by Commander in Chief Pacific Fleet (CINCPACFLT) and Commander Coast Guard Pacific Area (PACAREA) took place on April 7-10, 2003 at the Naval Postgraduate School (NPS) in Monterey, Ca. This second wargame distinguishes itself as a case study in this thesis for two reasons.

First, the wargame was held within weeks of the invasion of Iraq during the opening moves of OPERATION IRAQI FREEDOM. Thus, the order of battle for the game took into account deployed and surged forces, testing the feasibility of a concurrent *home* and *away* game. Second, this was the first maritime wargame since the establishment of NORTHCOM where the new unified command was tested as the stove pipe for MHLA. The game's battle rhythm consisted of four "moves" with each "move" representing a week's time, in real time (April – May 2003). Between each move, the stakeholder teams gathered

for plenary sessions to discuss actions taken during the moves and to brief the next move.

1. Game Objectives and Scenario/ Move Overview

The game, set in real time with current world affairs, opens with the U.S. in a wartime posture. The U.S. has deployed its air land and sea forces in the Arabian Gulf for OPERATION IRAQI FREEDOM. The opening salvos were fired just weeks before April 7, 2003, the first move of the wargame. Throughout the week of April 7, the U.S. was at High Condition (Orange) under the current Department of Homeland Security Advisory System because of threats of terrorist attacks in retaliation for U.S. action against Iraq.

As a game artifice, the initial scenario briefing postulated that maritime threats to the homeland existed to both the East and West Coasts. However, due to game sponsor orientation, only threats to Pacific area interests were played out in full fidelity. The principal objectives of the April 2003 Maritime Homeland Security and Maritime Homeland Defense wargame were to:⁷²

- Evaluate the effectiveness of recently developed operational plans and policies for MHLS and MHL D
- Assess MHLS/MHL D transition dynamics among key operational stakeholders.
- Evaluate the ability of current assignment of roles and responsibilities to counter diverse threats.
- Evaluate the ability of current MHLS/ MHL D command and control arrangements to counter diverse threats.
- Identify MHLS/ MHL D capabilities-based requirements for the Pacific area operation.

The game examined MHLS/ MHL D operational integration in the Eastern Pacific Theater, specifically at the ports of San Diego, Honolulu, and Valdez, Alaska. Because the summary of moves in the final report is classified, this thesis is unable to treat the moves in the same detail as the 2001 MHLS

⁷² Dr. Kathleen Robertson, *Maritime Homeland Security/ Defense Wargame Game Book*, Naval Postgraduate School, Monterey, Ca.: April, 2003

wargame. It is recommended that further research in this area include a study of the classified *Final Game Report*. The game did include several plausible and carefully researched threats that should be considered and gamed further. Among the threats addressed by the stakeholders, the following presented the greatest tensions in the game:

- Surveillance and hijacking of the Coronado Ferry in San Diego Harbor.
- Biological attack on a cruise ship preparing to enter port in Honolulu
- Hijacking of a semi-annual ammunition barge shipment from Seattle Washington to Valdez, Alaska
- Purchase of Rigid Hull Inflatable Boats and mini-submarines
- Mining of the entrance to San Diego Bay
- Seaborne attack on critical infrastructure nodes in Hawaii and a coastal civilian nuclear power plant near San Diego.
- Dirty bomb delivered to San Diego via a hijacked merchant ship.
- Coordinated sea and air attack on Valdez terminal and Alaskan Pipeline.
- Severed trans-Pacific connectivity in various C2 submarine cable connections.
- Seaborne threats to nuclear-powered aircraft carriers moored in-port.

2. Competing Tensions and Choices

While classification of the wargame report precludes detailed discussion of specific game results, this thesis can address some important structural aspects of the game where competing tensions and choices were evident. First, due to game sponsor orientation, almost all game events focused on Pacific area concerns. Given the high fidelity play of Pacific area maritime threats, without commensurate attention given to suggested scenarios along the Atlantic or Gulf Coasts, NORTHCOM players and C2 arrangements were not stressed by the need to focus attention in multiple theaters of operation.

Even so, the need to perform effective C2 and allocate scarce resources in multiple disparate maritime locations in the Eastern Pacific area raised tensions, particularly between NORTHCOM and PACOM, regarding competing MHLS and MHL D responsibilities. Had there been simultaneous play of full fidelity events on multiple coasts, the true effectiveness of the current C2 arrangement for NAVNORTH would have undergone greater stress. This seems particularly important for determining what triggers should be used to direct transitions from MHLS to MHL D, and back again to effect smoothly efficient and timely responses to urgent attack scenarios.

Second, game sponsors intentionally constrained some *red* threat vectors in order to facilitate continued *blue* game play in operational modes that enabled *blue* to test their capabilities "within the box." While that was deemed appropriate and necessary to meet sponsor objectives, it was not sufficient to fully test *blue* force capabilities and C2 effectiveness to deal with some already demonstrated *red* asymmetric threat vectors which may operate from "outside the box."

In particular, *red* exploitation of civil aviation vulnerabilities, both in general and commercial aviation fields, especially cargo aircraft that could potentially pose a 9/11-like threat to maritime related and key coastal infrastructure was excluded from play. Also, potential *red* use of shoulder fired surface-to-air missiles "from the sea" was disallowed in game play.

The game design in both the November 2001 and April 2003 wargames focused on a one-sided game, dynamic *blue* play against a static *red* threat. Given the operational limitations of non-state actor terrorists, this seems appropriate. If NORTHCOM were to face MHLS and MHL D from another state actor however, more robust two-sided game designs would be needed.

3. Findings and Recommendations

Because this was the first major joint MHLS/ MHL D wargame involving NORTHCOM, the game presented some challenges which served to help shape NORTHCOM's future maritime planning. Some valuable findings and recommendations pertaining to this thesis included in the final game report are

summarized here. Again, because of the classification of the final report only the unclassified findings are presented here. A review of the final report is recommended since many of the findings, insights, and recommendations that must be withheld here due to classification are pertinent to this thesis.

First, the stakeholders found that in addition to their MHLS role, the USCG can also be effective as a MHLDC commander as tasked by the maritime component commander. This is especially important for port areas where there is seldom any significant DoD force presence. The key stakeholders recommended that USCG be integrated into the MHLDC C2 architecture.

Second, the game found some operational seams in the C2 structure, specifically when the threats were presented at the perimeters of the regional Combatant Commanders' (COCOM) Area of Responsibility (AOR). For example, the C2 structure for Alaska was found confusing by the stakeholders, where ACCOM is responsible for land defense while PACOM is responsible for air and sea defense. Here, the key stakeholders recommended restructuring the C2 architecture so that NORTHCOM becomes responsible for Alaska. This recommendation is valid since NORTHCOM coordinates regularly with Canada in the NORAD role.

Another C2 issue found was that the structure for MHLDC in Hawaii was at the Commander Joint Task Force (CJTF) level, not at the COCOM level. The key stakeholders recommended that the MHLDC C2 structure mirror the COCOM structure of NORTHCOM for maritime operations. Also related to the C2 problem, stakeholder teams found the Request For Forces process too slow in effectively reacting to actionable intelligence and recommended a more streamlined process be developed.

Third, several threats crossed over from the territorial borders of Canada and Mexico where a maritime response would have required multi-national cooperation. Mexico was of particular concern because of its border's proximity to the second largest Fleet Concentration Area, San Diego. While NORAD has formal agreements with Canada, NORTHCOM has no formal agreements with

either Canada or Mexico. The key stakeholders recommended NORTHCOM negotiate formal agreements with Canada and Mexico for operations within its AOR.

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

Irrefutably, an unchecked coordinated seaborne attack against one or more U.S. ports could exploit the Achilles Heel of the U.S. With the seams rapidly closing on commercial and private air transportation security, the path of least resistance leads to the maritime domain. This is a crucial time to close the gaps and seams in Maritime Homeland Security and Defense as we confront the challenges and threats posed against the United States by transnational terrorism and asymmetric warfare. NORTHCOM faces the greatest challenge today unparalleled by any other regional commander --- deterring and defending against an attack on U.S. soil. The horrific events of September 11, 2001 and its ripple effects elucidate that, in spite of the rhetoric, an attack on the U.S. is not the same as an attack on either its' allies or interests.

This thesis has examined the role U.S. Northern Command (NORTHCOM) is performing in the maritime domain as the new Unified Command responsible for homeland defense. It has also illustrated the importance of a maritime force capable of responding to conventional as well as asymmetric threats within the maritime domain.

Finally, this thesis has examined the challenges for NORTHCOM in the maritime domain as NORTHCOM's mission continues to sharpen by identifying operational, structural, and cultural seams between Maritime Homeland Security and Homeland Defense.

B. REVIEW OF RESEARCH QUESTIONS AND CONCLUSIONS

This thesis set out to answer the primary question: Can NORTHCOM effectively accomplish maritime homeland defense and support homeland security without having permanently assigned maritime forces? Initially, this thesis began with a presupposition that NORTHCOM could not function under the current MHLS/ MHL D regime. After a careful study, however, this thesis finds that NORTHCOM can and must operate under this construct.

NORTHCOM maritime planners should instead focus on overseeing experimentation and interoperability, beyond the horizon planning for the maritime defense forces. This thesis has shown that MHLS and MHL D require a team effort of Coast Guard, Navy and other federal stakeholders. This level of coordination requires a Combatant Commander. At minimum maritime forces should be made available for training and exercises to test the current structure beyond the scope of wargaming.

In addition to the primary question, this thesis answered a succession of secondary questions, starting with: What are the potential threats challenging NORTHCOM in the maritime domain? This thesis classified the threats into Low, Middle, and High Impact. These are clearly not all inclusive threats since by nature; asymmetric warfare is limited only by the imagination and creativity of weaker but motivated aggressor. The essential takeaway is that the magnitude of an attack does not necessarily drive the impact. A coordinated small boat attack in several unprotected ports, which registers as a low impact threat could have the same psychological and economic effects as a medium or high impact threat in a single protected port.

Secondly, this thesis sought to scrutinize the seam in transition from Maritime Homeland Security to Maritime Homeland Defense and explicate potential mission priority, service capability, and cultural mismatches, which could potentially stymie command and control in the transition from a MHLS to MHL D posture in the event of a seaborne terrorist attack. This thesis has found that this seam has been identified and that the gap is only broadened by the service capabilities and service culture mismatches. Hence, this area continues to be a work in progress.

NORTHCOM will continue to be challenged by the divergent mission priorities and service cultures within the Navy and Coast Guard. Policy for MHLS/ and MHL D will evolve more quickly than these two subsets. NORTHCOM will need to acknowledge the weaknesses in this area and drive the interoperability to achieve a more holistic maritime force capability.

C. SUGGESTED AREAS FOR FURTHER RESEARCH

This thesis only probes the surface of the challenges facing NORTHCOM. Since NORTHCOM was only fully operational as of September 11, 2003, it has not faced any known credible threats in the maritime domain. This is the preeminent era for experimentation, exercising, and further wargaming of the maritime defense C2 construct. Other reports and studies have been published since the information cut off date for this thesis including the Defense Science Board's Summer 2003: *Department of Defense Roles and Missions in Homeland Security*. There are some valuable insights here that should be studied further within the context of this thesis' research area.

This new Combatant Command will undergo some steep learning curves and face many hurdles along the way. This area is a "hotbed" for further research and policy development affecting MHLS and MHL D. Also of interest will be the evolution of the relationship between Department of Defense and Department of Homeland Security along the seam of MHLS and MHL D. NORTHCOM's success in the maritime domain will hinge on its ability to coordinate and smooth the structural and cultural seams between the Navy and Coast Guard forces.

Another area for further research is the impact of the Joint Harbor Operations Concept. Further study and experimentation with expansion of this concept into non-military but critical U.S. ports like New York, Los Angeles/ Long Beach, and Miami may be the key to developing a much-needed "Maritime NORAD."

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